

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT			1. CONTRACT ID CODE	PAGE OF PAGES 1
2. AMENDMENT/MODIFICATION NO. 0001	3. EFFECTIVE DATE 5/3/2002	4. REQUISITION/PURCHASE REQ. NO. W25PHS-2088-6580	5. PROJECT NO. (If applicable)	
6. ISSUED BY CODE		7. ADMINISTERED BY (If other than Item 6) CODE		
USAED, PHILADELPHIA WANAMAKER BUILDING, 100 PENN SQUARE EAST PHILADELPHIA, PENNSYLVANIA 19107-3390		USAED, PHILADELPHIA WANAMAKER BUILDING 100 PENN SQUARE EAST PHILADELPHIA, PENNSYLVANIA 19107-3390 ATTN: MICHELLE BERTOLINE 215-656-6914		
8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State and ZIP Code)			(<input checked="" type="checkbox"/>)	9A. AMENDMENT OF SOLICITATION NO. DACW61-02-R-0034
			(<input checked="" type="checkbox"/>)	9B. DATED (SEE ITEM 11) 4/30/02
				10A. MODIFICATION OF CONTRACTS/ORDER NO.
				10B. DATED (SEE ITEM 13)
CODE	FACILITY CODE			

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

☒ The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers tended. ☐ is extended, ☒ is not ex-

Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods:

(a) By completing Items 8 and 15, and returning _____ copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA (If required)

MISCELLANEOUS VESSEL MODIFICATIONS TO THE FLOATING CRANE HENRY M. SHREVE

13. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS, IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

(<input checked="" type="checkbox"/>)	A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.
	B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).
	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:
	D. OTHER (Specify type of modification and authority)

E. IMPORTANT: Contractor ☐ is not, ☐ is required to sign this document and return _____ copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)

THIS AMENDMENT DOES NOT EXTEND THE PROPOSAL DUE DATE OF 22 MAY 2002 AT 4:00 P.M.

The Government proposes to complete the work required during two separate and distinct repair availability periods. The first repair availability period will start on or about June 15, 2002 and the second repair availability period will be on or about August 1, 2002.

SECTION C: Delete pages C-1 thru C-34 in their entirety and substitute with the revised pages C-1 thru C-35 annotated Amendment Number 0001 attached hereto.

Please indicate receipt of this Amendment on Standard Form 1449 (SOLICITATION, CONTRACT/ORDER FOR COMMERCIAL ITEMS) as Amendment Number 0001. Failure to acknowledge all Amendments may be cause for rejection of the offer.

Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER (Type or print)		16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print)	
15B. CONTRACTOR/OFFEROR	15C. DATE SIGNED	16B. UNITED STATES OF AMERICA	16C. DATE SIGNED
(Signature of person authorized to sign)		BY (Signature of Contracting Officer)	

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**PART I - THE SCHEDULE - SECTION C
DESCRIPTION/SPECIFICATION/WORK STATEMENT**

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PART I - THE SCHEDULE - SECTION C
DESCRIPTION/SPECIFICATION/WORK STATEMENT

C001 GENERAL STATEMENT

The contractor shall furnish all engineering, design, labor, services, equipment, parts and materials and perform miscellaneous modifications and repairs to the *HENRY M. SHREVE* listed in this contract.

Drawings, equipment or materials to be furnished by the Government shall be specifically listed in the appropriate contract clause. Unless specifically listed, the contractor shall assume no drawings, equipment or materials will be furnished by the Government and shall propose accordingly.

C002 PRINCIPAL CHARACTERISTICS

HENRY M. SHREVE has the following principle dimensions:

Length	Beam	Depth	Draft	Air
Overall	Molded	Molded	Forward/Aft	Draft
300'-0"	100'	14'	5'-6"/6'-0"	52' from Waterline

C003 STANDARDS

All design, engineering, modifications and repairs to the vessel shall be performed in accordance with the criteria set forth in the latest issues of the following standards or regulations:

- U.S. Army Corps of Engineers, Publication No. EM 385-1-1, “Safety and Health Requirements Manual” |
- Code of Federal Regulations, Title 29, Part 1900, Occupational Safety and Health Administration. |
- Code of Federal Regulations, Title 29, Part 1900, Subpart 1915, Occupational Safety and Health Administration, “Shipyard Industry”, OSHA Publication 2268. |
- American Bureau of Shipping (ABS): Guide for Shipbuilding and Repair Quality Standard for Hull Structures During Construction (July 1998). |
- Institute of Electrical and Electronic Engineers Standards, Publication No. IEEE-45 – “Recommended Practice for Electrical Installation on Shipboard” |
- Illuminating Engineering Society, “Recommended Practice for Marine Lighting” |
- National Electric Code (NEC). |
- U.S. Coast Guard Regulation 46 CFR Subchapter J: Electrical Engineering. |

C004 CLASSING AND CERTIFICATION

The vessel was originally built and classed in accordance with ABS Rules for Steel Vessels.

The Government does not intend to pursue drawing reviews and inspection services from ABS in support of this scope of work.

C005 VESSEL IDENTIFICATION

The vessel to be acquired through this solicitation has been assigned the following name and Marine Design Center hull and project number:

MDC Hull Number	550
MDC Project Number	2570
Vessel Name/Number	HENRY M. SHREVE

C010 DEFINITIONS

The following definitions are applicable to phrases and acronyms used throughout this contract.

ARCO - Authorized Representative of the Contracting Officer - a member of the contract management and quality assurance team authorized by the Contracting Officer to perform certain administrative and managerial duties. A copy of the ARCO's authority letter is furnished to the Contractor.

Contracting Officer (C.O.) - A person with the authority to enter into, administer and/or terminate contracts and make related determinations and findings.

COR - Contracting Officer's Representative - an older acronym, which has more recently been replaced by ARCO. Also see ARCO.

USACE - Acronym for United States Army Corps of Engineers.

MDC - Acronym for Marine Design Center.

ABS - Acronym for the American Bureau of Shipping.

CHECKPOINT - A stopping point, beyond which the contractor shall not proceed until the required inspection, test, measurement, etc., is completed.

C025 CONTRACTOR QUALITY STANDARDS

A. GENERAL REQUIREMENTS FOR ACCESS

After careful planning and subject to the approval of the COR, the Contractor may cut and/or remove plating or framing members from the vessel for access to machinery, piping, wiring and equipment. Wherever possible, the contractor shall identify and use previously made accesses. Under the same conditions, the Contractor may also remove piping, wiring, fixtures, fittings, etc., for access and clearance to perform required work.

At the completion of required work, all removals shall be restored. Replacement shall consist of returning the removed equipment, piping, wiring, structural members and plating to their original locations and reinstallation.

All accesses shall be submitted to the COR in writing, including a drawing with the approximate size and location of the accesses, on a Condition Report for review and approval.

The cost for all removals and reinstallations shall be included in the cost of the respective work item.

Where parts, components or equipment are damaged as a result of the removals, the contractor shall replace them in kind at no additional cost to the Government. Fit and finish shall be restored and damaged paint shall be renewed at no additional cost to the Government.

Installations shall be in accordance with the original as-built drawings or the referenced standards.

All removed equipment shall be tested as part of the Tests and Trials required Section-E.

Any removals for access shall be temporarily supported if lack of such support could cause failure or damage to adjacent systems, distortion of adjacent framing or plating, or result in a safety hazard.

The contractor shall maintain a hazard-free access in and out of any space at all times throughout the availability of the vessel.

Any temporary openings in the deck or any other area that may constitute a fall hazard shall be roped off. Horizontal openings, such as those on the deck, shall be protected with contractor-furnished temporary combing and safety netting around the entire perimeter of the deck opening when the opening is not in use.

B. GENERAL REQUIREMENTS FOR HULL AND STRUCTURAL WORK

All new hull plating and shapes shall be fabricated from ABS Structural Steel or ASTM A36, "Specification for Structural Steel".

Due regard shall be paid to details in both the design and construction of all new and/or modified structures, to prevent structural discontinuities and other stress concentrations.

Where openings must be provided in the structure to gain access internally, the contractor shall provide adequate compensation to maintain the original structural integrity while the opening is present.

Watertight and oiltight integrity of all bulkheads and decks shall be maintained at all times throughout the repair period.

Openings created by permanent removal or addition of piping, wiring or other materials shall be closed by means of watertight penetrations or insert plates of equal thickness flush-welded to the bulkheads.

All welds shall be ground flush and smooth.

Sections of stiffeners, beams, girders, etc., shall be welded to the bulkheads to maintain continuity of structure.

Openings cut into decks and bulkheads shall be adequately compensated in accordance with ABS requirements to maintain original strength, unless the opening is cut in such a manner that it can be rewelded to existing framing members.

Steel plating shall be installed using proper welding procedures and sequences to insure fair plating panels with minimum distortion. The use of filler materials to surface unfair areas is not acceptable. Plate fairness and fit-up shall be in accordance with the ABS Guide For Shipbuilding and Repair Quality Standard for Hull Structures During Construction, dated July 1998.

C. GENERAL REQUIREMENTS FOR FOUNDATIONS AND SUPPORTS

Suitable foundations shall be provided under all new units of machinery. Foundations shall be built up of plates and structural shapes to the dimensions required for satisfactory support, and shall assure rigidity, freedom from vibration and designed for secure containment of the equipment in event of crash stops. Foundations shall be constructed to the machinery manufacturer's requirements, unless otherwise specified in the repair Clause.

Where dripping water or oil can be expected, the top plates of foundations shall project beyond the edges of the bedplates or bases of units being supported and formed into spill containment/drip pans. Flat bars welded around the edges of the top plates, or combing welded around the deck near the foundation, may be used to retain any leakage. Valved drains shall be provided at the ends or corners of the pans to facilitate fluid removal or recovery.

Foundations shall extend beyond the equipment fore and aft or transversely to distribute the load and to avoid excessive weight concentrations.

Doublers, insert plates, girders, headers and stanchions shall be fitted and under-deck framing shall be reinforced to support units mounted on deck.

D. GENERAL REQUIREMENTS FOR ELECTRICAL SYSTEMS

All electrical installations as set forth elsewhere in these specifications shall be in compliance with the referenced rules, regulations and standards, ~~especially with regard to ambient and working temperature requirements.~~

The design, construction and installation of all system components shall be suitable in all respects for marine service and the intended application. All system components shall be furnished new and unused.

Cables shall be similar to L.F. GAUBERT, Specification #474, TNI Series, 90°C rated, armored, USCG & ABS approved. Armored cables used shall be basket weave armor in accordance with IEEE-45 or equivalent (as classified by UL as IEEE-45 equivalent).

The Contractor shall select the size of cables based on the voltage drop. The maximum allowable voltage drop shall be according to IEEE-45 section 21.

All wiring shall be clipped and bracketed to provide straight, vertical and horizontal runs.

All cable installations shall be supported on galvanized steel brackets, and shall comply with all applicable provisions of IEEE-45 Sections 20 and 22. Cable supports shall be heavy enough to bear the weight of cables without bending, and all supports shall have rough or sharp edges removed so that cable armor will not be damaged. Horizontal runs of cable shall be supported by brackets spaced every two feet. Vertical runs of cables shall be supported every two feet with individual cable straps and bar hangers or brackets.

All cable bulkhead penetrations shall employ the NELSON MCT Multi-Plug and/or the Uni-Plug system. Spare plugs shall be incorporated in each Multi-Plug Unit for the addition of cables.

All cables shall be identified with tags fabricated from strip aluminum with raised lettering, securely fastened to the cable by banding.

Soldering shall be performed only with resin or other neutral flux. Ends of all wires not tinned by the cable manufacturer shall be tinned before securing to terminals or before applying lugs. Solderless lugs shall be used wherever practicable. Terminals or lugs that are to be soldered to cable ends shall first be cleaned and tinned or treated with a neutral flux to ensure a good bond.

~~Electric cable shall be either commercial marine type cable or armored cable. All new cable installed on weather decks or where exposed to seawater spray shall be armored. Electric cable shall be capable of handling the required amperage.~~

Electrical installations shall be such so as to eliminate the possibility of mechanical injury or damage from the accumulation of dust, oil, vapors, steam, dripping liquids, etc.

Cable penetrations, where required to be watertight, shall have approved kick-plates, stuffing tubes, etc., and shall be filled with duct seal, or pitch where originally used.

E. GENERAL REQUIREMENTS FOR HOT WORK

Prior to commencing any hot work, the contractor shall take steps necessary to remove any flammable or combustible material from the affected area.

The contractor shall supply all personnel performing hot work operations with suitable breathing, clothing, vision and hearing protection to protect personnel from fumes, sparks, bright light, and noise resulting from hot work operations.

The contractor shall provide at least 1 fire watch for no more than 6 welders and/or burners/arc-gougers and have line of sight contact with these operations at all times. They shall be responsible for providing the appropriate A/B/C rated fire extinguishers in sufficient capacity to cope with a fire in their areas. They shall also be responsible for securing the area against latent fire hazards 1/2 hour after hot work operations have stopped. If work is being performed on a bulkhead, a fire watch shall be posted on both sides of the bulkhead, with the same latent fire hazard monitoring to apply on both sides of the bulkhead.

F. GENERAL REQUIREMENTS FOR WELDING

Only welders who have successfully passed the qualifications test of the ABS, the USN or the USCG for steel welding shall do all welding under this contract.

The contractor shall bear the expense of conducting these tests, and shall certify by name to the COR those welders who have successfully passed the prescribed tests. The contractor shall require any welder to repeat these tests when, in the opinion of the COR or his appointed representative, the work of the welder indicates a reasonable doubt of his efficiency. In such cases the welder shall be recertified as above.

The electrodes used throughout the work shall be suitable for use with the parent metal at each weld. Electrodes shall be received on the job in unbroken packages bearing the manufacturers' label or be otherwise marked.

Certified statements shall accompany each shipment of electrodes to the effect that sample pieces, representative of each kind and size in each shipment, have satisfactorily passed the tests required by the ABS, the USCG, and/or the USN for welding on the parent material. The COR shall be provided with documentation that certifies compatibility of electrode with parent material.

Welding procedures, where welding to a casting or a forging, shall be submitted to the COR for approval prior to welding. The procedure shall cover the type of weld process, welding electrode, pre-heat, welding sequence and stress relief required.

All welding shall be smooth, tight and free from undercuts, porosity, craters and gas inclusions.

Shell and deck butts and flush seams shall be back chipped or gouged to sound metal from the closing side before welding.

All sharp and/or rough edges shall be ground smooth and all weld splatter shall be removed.

All welds for temporary dogs used during modifications or to secure plate in place while welding shall be ground flush with the surrounding metal.

Assembly of all welded joints before welding shall be such as to secure proper gaps in butt welds and metal contact in fillet welds. Welding shall not be used to close openings larger than stipulated for each plate thickness by the ABS.

All watertight seal welds shall be of a “bead” type. No “weave” welding is permitted.

Welding procedures, as to direction, length, number, temperature and sequence, shall be carefully planned to minimize distortion and locked-in stresses.

Any welding to or of hull shell plating, watertight and/or oil-tight bulkheads shall be inspected by the ABS. This includes the removal of existing plate, examination of the remaining surrounding plate, examination of the fit-up, and examination of the final welding.

The contractor shall maintain a log of all welders who worked on the vessel throughout the repair period, their certification and the repair Clauses on which they worked. This log shall be made accessible to the COR at any time during normal business hours.

Testing of welds, where required, shall be addressed under the individual repair Clauses.

The contractor shall provide a certified statement from the manufacturer for each shipment of electrodes used. Documentation shall also be provided stating that the electrode is compatible with the parent/base metal.

G. GENERAL REQUIREMENTS FOR WORKMANSHIP

All parts of the work intended to join or bear upon others shall be cut or trimmed to fit neatly.

All faying surfaces shall be clean and smooth before bolting up. Shims or liners shall not be used for the purpose of overcoming a bad fit.

Ends of outstanding flanges shall be cropped.

Lightening holes may be punched, sawn or sheared and all burrs and cutting slag shall be removed. Weld spatter shall be removed from all plating and stiffeners.

All mounting holes shall be drilled and reamed. Holes in members having sharp curvature shall be avoided whenever possible.

All frames and longitudinals shall have limber holes and/or snipes of adequate size to allow water to flow to the lowest point of each compartment and to allow air to escape.

All joints or areas of connection between dissimilar metals shall be properly insulated by gasket material.

All fastenings used for attaching dissimilar materials shall be made of AISI type 304 or type 316 series stainless steel.

All labor shall be specially skilled for each kind of work, thorough, first-class in every respect and under competent direction. All laborers shall have the required OSHA training associated with their activities, including, but not limited to, hearing protection, respiratory protection, vision protection, etc.

Where work of one trade joins, passes through or is on other work, there shall be no discrepancy or misfit when completed. In engaging one kind of work with another, marring or damaging of previously acceptable construction shall be cause for rejection.

H. GENERAL REQUIREMENTS FOR INSPECTION & TESTING

The presence of the word “CHECKPOINT” in these specifications shall be interpreted by the contractor as a stopping point, beyond which the contractor shall not proceed until the required inspection, test, measurement, etc., is completed.

The contractor shall provide advance notice (no less than 6 hours) to the COR prior to the arrival at a CHECKPOINT. If the COR, after having received notification, is not present at the designated time and location for the inspection or test, the contractor shall proceed with the inspection or test. The results of the CHECKPOINT inspection or test shall be documented as required above.

The contractor shall not be relieved of responsibility for the proper performance of all work where a CHECKPOINT is specified.

The end of each specification Clause shall be regarded as a CHECKPOINT, whether stated or not.

Upon completion of the work listed in each specific repair Clause, the contractor shall provide, in Condition Report format, a list of all completed CHECKPOINTS.

I. GENERAL REQUIREMENTS FOR PAINTING

Paint shall be delivered in sealed containers with labels to indicate manufacturer, contents, and any special instructions. Paints and painting materials shall be stored under cover and protected from extreme temperatures.

Paints which have exceeded the closed shelf life or pot life recommended by the manufacturer shall not be used. Additionally, paints shall not be applied in weather or humidity conditions not recommended by the manufacturer.

Surface preparation and paint application shall be in strict compliance with the coating manufacturer's recommendations. The Contractor shall take particular care to insure that coating system requirements are met in all areas, especially those difficult to coat, such as flange undersides.

The vessel's coating system is composed of the following coating types:

- self priming epoxy base coat similar to Ameron Amercoat 370
- flake reinforced abrasion resistant epoxy barrier coat similar to Ameron Amerlock 400GF
- fade resistant urethane top coat similar to Ameron Amercoat 450 HS

H. COATING COLOR SCHEDULE

Colors shall conform to Federal Standard 595a(3) Colors Identification Numbers. Color chips (3" x 5") may be produced from the Naval Publications and Forms Center, 5801 Tabor Road, Philadelphia, PA 19120 (215-697-2000). The coloring schedule shall be as follows:

<u>AREA</u>	<u>COLOR/FS595 NUMBER</u>
Hull Exterior	Black/17038
Decks/Deckhouse Top	Deck Red/10076
All Interior	Pearl Grey/Ameron Gr-3
Deck Fittings	Yellow/13655
Hull Markings	White/27880
Ladders	Black/17038
Railings	Black/17038
House/Tub Exterior	Old Ivory/17855

On all exterior deck areas, both under coat (barrier coat for hull and base coat for decks other than hull) and top coat shall be colored Deck Red.

All top coat thicknesses shall be sufficient to provide complete opaque color coverage. Thicknesses increased over the DFT minimums required above shall be provided if required for opaque color coverage.

Any items of equipment shall be painted with the individual manufacturer's standard colors. Painted surfaces damaged in handling and installing the equipment shall be repainted.

I. FINAL INSPECTION OF PAINTING

The Contractor is responsible for redelivering the vessel with all work affected painted surfaces in sound condition, and in accordance with this specification.

All areas contaminated with grease, oil, lubricants or other foreign matter shall be cleaned with solvent. After removal of contaminants clean the affected areas in accordance with the paint system manufacturers recommendations.

Unless otherwise specified, all high pressure water blasting shall be performed in accordance with WJ-3 surface finish requirements of Steel Structures Painting Council Specification No. SSPC-SP-12 to remove all rust, old paint, mill scale, rubber, and remaining oil, grease, dirt and foreign matter. No more than flash rust, slight shadows, streaks or discoloration shall remain. Any surface preparation required in this package shall be to this Specification unless stated otherwise and shall meet the paint manufacturer's requirements.

Any new plate to be installed that comes with a "preconstruction" primer from the plate manufacturer or supplier shall be prepared to a WJ-4 surface finish requirement in accordance with Steel Structures Painting Council Specification No. SSPC-SP-12.

Colors specified shall conform to the color spots shown on Federal Standard No. 595, COLORS. All coatings shall be in accordance with all current EPA regulations and guidelines and must receive prior approval by the COR. The Contractor shall provide material safety data sheets for each paint used.

The components of all paints shall be ground and mixed to produce a viscous, smooth, homogeneous, lump-free mixture. All paint, when applied, shall provide a satisfactory film and a smooth, even surface with a dry film thickness in accordance with the paint manufacturer's requirements.

Before purchasing or applying paint, the contractor shall submit to the KO the name of the manufacturer together with supporting evidence that such paint conforms to the specifications.

All paints used in the performance of this work shall be within the manufacturer's specified closed container and "pot" shelf life. All paints/coatings shall be from the same manufacturer.

All coatings shall be delivered to the worksite in sealed containers. Each container shall show: name of manufacturer, name of paint, formula of paint, batch number, and date of manufacture (not coded).

The paint system shall be applied in strict accordance with the manufacturer's guidelines and recommendations, including time between coats, proper application equipment, thinning and disposal of excess paint and thinner and cleaning of equipment.

All over spray of any new paint onto existing finished surfaces shall be removed and all surface repaired to original condition.

J. GENERAL REQUIREMENTS FOR CONFINED SPACES

Prior to any work commencing in any compartment that has been labeled as a Confined Space or meets the criteria for such a space, the compartment shall be pumped dry, cleaned, gas-freed and tested in accordance with 29 CFR 1915 and EM-385-1-1 and other applicable standards.

The COR shall be furnished a certificate stating that each compartment gas-freed by the contractor has been initially tested by a NFPA-certified Marine Chemist and that the space is safe for hot work and/or entry. A competent person may perform follow-up daily monitoring tests, providing conditions have not degraded. In such cases, an NFPA-certified Marine Chemist shall perform the retest.

The contractor shall provide proper ventilation of spaces in which work is required or men are required to enter. Ventilation shall be of the negative type, i.e. exhausting from the space to the outside atmosphere. Disposal of material accumulated during gas-freeing work shall be the responsibility of the contractor and shall be in accordance with all federal, state and local laws.

The cost of cleaning, gas-freeing, certifying and monitoring any space to make it safe for hot work and/or entry shall be included in the Clause where it is required, unless stated otherwise.

All spaces shall be checked by the contractor immediately prior to any USACE personnel entering the space for inspection purposes, and posted accordingly.

K. GENERAL REQUIREMENTS FOR SAFETY

The contractor shall comply with the requirements of EM 385-1-1, "U.S. Army Corps of Engineers Safety and Health Requirements Manual" and 29 CFR 1915, "Shipyard Industry" throughout the contract period.

A representative of the KO will make a safety inspection of the shipyard facilities as part of the Pre-Construction Conference. At such time, the contractor's Safety program shall be reviewed with the safety requirements.

The contractor shall have a qualified safety technician make daily routine safety inspections with the COR, or his designated representative, with regard to safe work practices during the course of the repair period. The contractor shall promptly address any deficiencies noted during these inspections or any other unsafe conditions brought to their attention by the KO's designated safety representatives. To avoid any conflict of interest, the safety technician shall not be an employee who reports directly to the project superintendent, i.e. that person who is directly responsible for the performance of the overhaul.

The contractor shall furnish supports of suitable size, strength and construction to ensure that all hoses, electric cables, water lines, etc. remain clear of the deck and permit the use of the deck by personnel. In area where hoses, cables and lines must run along the deck, the contractor shall provide, install and maintain sloped guards that cover the entire walking surface to prevent slips and falls.

The contractor shall maintain a lockout/tag out log of all systems secured to perform specified work. It is essential that work leaders and tradesmen maintain the information in the log current and accurate. When systems need to be secured or activated, the Engineer on watch shall be notified

Immediately upon entry of the vessel the COR will conduct a initial safety conference and walkthrough to familiarize the contractor with the vessel, highlight potential safety hazards in regards to the repair scope, and address crew concerns.

C040 SCOPE OF WORK**A. GENERAL**

The contractor shall furnish all engineering, design, labor, services, equipment, parts and materials and perform miscellaneous modifications and repairs to the *HENRY M. SHREVE* listed in these specifications.

B. CONTRACTOR'S RESPONSIBILITY

The builder shall be required to perform design and engineering and other technical details necessary to support his administration, operation, and production practices

The Contractor assumes complete responsibility for the completion of the work items in this contract. Should the Contractor determine at any time that he is unable to fulfill these responsibilities, he shall notify the COR immediately of the problem experienced and his proposed manner of correction.

C. REFERENCE DRAWINGS

The solicitation includes the following drawings for information purposes.

<u>Drawings No.</u>	<u>Title</u>	<u>Format</u>
550-D205-01	Outboard Profile	.CAL raster
550-C215-01	General Arrangement	.CAL raster

|

C042 UTILITIES AND SERVICES

A. General

The Contractor shall furnish temporary shipboard services and utilities for the entire length of time that the vessel remains in the Contractor's possession. Utilities and services shall be provided to the extent necessary for maintaining the vessel's condition and performing the work required by this Contract, except as specified below. The Contractor shall be responsible for any movement of the vessel while in the Contractor's possession.

To support the work to be done, the Contractor shall provide temporary electrical and lighting services, trash and rubbish removal, and other services as specified in subsequent Specification sections.

B. Electrical and Lighting

The shore power requirements for the vessel are 480 volt, 3 phase, 3 wire AC. Voltage shall be maintained, within the supplying utilities standard voltage tolerance between all phases at all times. The electric service shall be protected by a multi-pole circuit breaker with over-current and low voltage protection.

C. Gangway(s)

A minimum of two gangways and safety nets shall be provided for safe access to and from the vessel throughout the shipyard period.

H. Other Services

The Contractor shall provide all labor, equipment, and services to perform the modifications specified herein, and attend to the vessel while in the possession of the Contractor. Equipment shall include items for surface preparation and preservation; welding, cutting, and heating; scaffolds, ladders, and other working surfaces; illumination and utilities; gear and equipment for rigging and materials handling; tools and related equipment; personal protective equipment; and other equipment as required. Services shall include tending mooring lines, maintaining the vessel's berth and position on blocks, cleaners, tugs, and other services as required.

Estimate ninety days (90) of pier side service.

C101 HVAC FOR CRANE ELECTRICAL CABINETS

The intent of this item is to improve the function and reliability of the crane's electrical system by treating the ambient conditions in the electrical ~~panels~~ motor variable speed drive enclosures. The contractor shall provide and install stand-alone HVAC units for electrical ~~cabinets-enclosures~~ to serve this purpose.

The contractor shall ~~be required to~~ provide all labor, material, and services required to complete this scope of work. The units shall be similar to Kooltronic Inc., Model KA4CNP47R-Y. The units shall have the following characteristics.

Model	Refrigerant	BTU/H Rating	<u>Max./Min.</u> °F	*** Volts	*** Hz	Running Amps
KA4CNP47R	R134a	4000	125/50	115/100	60/50	16.5

A total of six (6) units are required. The electrical ~~cabinets-enclosures~~ shall be modified to permit the installation of the units. Electrical power for the units shall be made available from within each cabinet. The contractor shall adapt to the existing electric system and install a 120VAC outlet as the power source. Drain lines through the cabinets and the flooring shall also be the responsibility of the contractor.

CHECKPOINT:

Upon installation, demonstrate the complete and full operation of the units to the satisfaction of the Contracting Officer's Representative.

All removals or areas damaged or marred during the installation shall be restored per the original.

C102 WORKBOAT STORAGE

The intent of this item is to provide an adequate means of safely storing a GFE workboat aboard the vessel.

The contractor shall provide and install a boat trailer designed for the SeaArk model 2072 work skiff. Provide permanent tie-down capability on the bow of the vessel to secure the trailer on the vessel. Location shall be per the direction of the Contracting Officer's Representative.

All paint and other areas damaged or marred during the installation shall be restored per the original.

C103 CRANE LIGHTING

The intent of this item is to enhance the current lighting capabilities on the crane boom. In addition, an aircraft warning light shall be installed on the boom tip. The contractor shall provide all labor, material, and services required to complete this scope of work.

Provide and install four (4) 1500 watt quartz floodlights similar to Granger Item No. 4PK94. The lights are to be spaced on the upper 2/3 of the crane boom. The lights are to be installed on a swivel bracket so that regardless of the boom angle the lights shall shine straight down. The contractor shall remove the one existing floodlight and return it to the Government. The existing electrical circuit and on/off switch shall be retained for ~~this one new service light~~. Provide new wiring and junction boxes, and switches as required to facilitate new installation. ~~Existing wiring is adequate for continued use.~~

Provide and install a standard commercial aircraft warning light beacon to the boom. The beacon shall be installed at the highest elevation of the boom. A new electrical circuit along with an on/off switch in the crane cab shall be provided. Power shall be obtained from the boom lighting circuit.

Demonstrate operation of the lights and the ability of the floodlights to swivel at various boom angles.

All removals or areas damaged or marred during the installation shall be restored per the original.

C104 DECK FITTINGS

The intent of this item is to provide enhanced line handling capabilities with additional deck fittings on the vessel. The contractor shall provide all labor, material, and services required to complete this scope of work.

- Provide and install the following additional deck fittings:
 - Sixteen (16) 48" kevels similar to Nabrico Model DF-484
 - Sixteen (16) 10" button chocks similar to Nabrico Model DF-185
- Doubler plates with radius corners under each kevel (including plug welds as/per ABS rules). Doubler plates shall be a minimum size of 36"x 20"x 1/2".
- Doubler plates with radius corners under each button chock (including plug welds as/per ABS rules). Doubler plates shall be a minimum size of 21"x 1/2".

The Contracting Officer's Representative will determine the actual locations for the additions.

The new location shall result in the relocation of eight (8) 24" round manholes. These manholes shall be relocated on the deck per the direction of the Contracting Officer's Representative. Subsequently, the vertical ladders at these locations shall be extended accordingly and relocated with the manholes. In addition six (6) tank vents shall be relocated on the deck per the direction of the Contracting Officer's Representative.

The ballast tanks shall be emptied using the ballast system of the vessel. The contractor shall obtain a "Safe For Hot Work Certificate" prior to performing any hotwork.

Existing penetrations shall be restored as new. Headers may be required to facilitate the installation in the new locations.

CHECKPOINT:

Test for tightness all area affected by this work in accordance with ABS rules.

All removals or areas damaged or marred during the installation shall be restored per the original.

C105 HINGED COVER PLATES

The intent of this item is to provide hinged cover plates over the openings between the side shell and the gate storage well sides (port and starboard) in the hold. The contractor shall provide all labor, material, and services required to complete this scope of work.

The cover plates are to be made of light gauge steel and configured so that they can be raised by one person.. The hardware shall include stainless steel hinges installed to fold flat against the gate well sides. When closed the cover plate should be adequately supported. When the covers are closed there should be no openings where trash can fall through into the inter-bottom.

All removals or areas damaged or marred during the installation shall be restored per the original.

C106 INCLINED LADDER

The intent of this item is to provide an additional means of access to the gate stowage frames from the main deck of the vessel. The contractor shall provide all labor, material, and services required to complete this scope of work.

Fabricate and install an inclined ladder from the deck to the aft end of the 10' level of the gate storage rack. The ladder shall be located on the aft side of the starboard gate stowage frame. The ladder should be 32" to 36" wide and have handrails on each side. The general construction should be similar to the existing ladders on the forward end of the gate storage rack.

All removals or areas damaged or marred during the installation shall be restored per the original.

C107 LIMIT SWITCHES

The intent of this item is to limit the vertical travel of the center movable gate stowage frame. This fixture is raised and lowered into position using four independently controlled ~~electric-hydraulic~~ winches. Currently, the mechanism ~~could-can~~ be lifted to a point high enough whereby the frame becomes disengaged from its guides. The potential for this condition is unacceptable. The installation of separate limit switches ~~to stop each one of~~ the four winches shall provide a means of protection against accidental disengagement. The contractor shall provide all labor, material, and services required to complete this scope of work.

CHECKPOINT:

Perform a function test of the winches to prove the proper operation of the limit switches. All testing shall be to the satisfaction of the Contracting Officer's Representative.

All removals or areas damaged or marred during the installation shall be restored per the original.

C108 HYDRAULIC SYSTEM CONTROLS

The intent of this item is to provide a secondary means of starting/ stopping the vessel's hydraulic system. Currently, the HPU can be started / stopped locally or at a central station located on the main deck near the crane tub. There are no means for an individual while positioned on the gate stowage frames to stop the HPU's. ~~This change shall address and correct this situation. The contractor shall provide all labor, material, and services required to The~~ installation of additional start / stop controls located on the control stand on the 10' level of the gate stowage frames ~~would-to~~ allow for immediate response to an oil spill or system failure. ~~The contractor shall provide all labor, material, and services required to complete this scope of work.~~

CHECKPOINT:

Perform a function test of the controls to prove the proper operation of the controls. All testing shall be to the satisfaction of the Contracting Officer's Representative.

All removals or areas damaged or marred during the installation shall be restored per the original.

C109 BULWARK OPENINGS

The intent of this item is to provide greater accessibility during line handling operations. Greater clearances are required in the bulwark in way of the deck fittings at Frames 19 & 23, port & starboard. The existing openings are too small and need to be enlarged. The contractor shall provide all labor, material, and services required to complete this scope of work.

Enlarge the existing openings (total of 4) to an approximate size of 2' high by 6 feet long. Radius corners shall be maintained. All burs and rough edges shall be ground smooth.

All removals or areas damaged or marred during the installation shall be restored per the original.

C110 NOISE AND VIBRATION MOUNTS

The intent of this item is to develop and provide ~~an improved mounting scheme to abate noise and vibration~~ attenuation from the diesel generator in the crane machinery house.

Special consideration shall be necessary to work around existing limitations in the overhead clearance.

The contractor shall retain the services of a noise/vibration abatement specialist such as Noise Control Engineering (NCE) to perform a study and produce a written report with recommendations to alleviate noise and vibration being transmitted to outside the crane's generator space through the foundation structure. The point of contact at NCE is Mr. Mike Bahtiarian. He can be reached at 978-670-5339.

Implementation of the recommendations shall be addressed under the CHANGES clause and shall not be priced as part of this item.

Retain the services of NCE to perform a post installation survey.

All removals or areas damaged or marred during the installation shall be restored per the original.

C111 CRANE CAB WALKWAY

The intent of this item is to extend the existing crane cab walkway along the front of the crane cab. The contractor shall provide all labor, material, and services required to complete this scope of work.

Extend the existing walkway from around the side to the front of the crane cab. The walkway shall be wide enough to allow an individual to clean and maintain the front window of the cab while compensating for the forward cant of the window. Provide additional handrails per original handrails. Walkway grating shall be serrated and shall be oriented to provide maximum visibility through the grating.

All removals or areas damaged or marred during the installation shall be restored per the original.

C112 HULL COATING SYSTEM

The intent of this item is to renew the coating system on the side shell of the vessel's hull. The existing coatings have faded and discolored over time. In addition, there are several areas on the hull where the existing system has been disturbed or worn away because of normal barge handling and fleeting. The contractor shall provide all labor, material, and services required to complete this scope of work.

The vessel shall be ballasted to its lightest level deck condition, approximately 5' draft. The area to be renewed shall extend from the waterline up [to](#) the deck edge and shall include all appurtenances such as towknees and rub rails.

The contract shall pressure wash the hull using a high-pressure device. The hull shall be [free](#) of all dirt, grime, debris etc. Where necessary the contractor shall mechanically clean any location [where](#) the original paint system has been destroyed and rust is present. The rubber pads on the towknees shall be masked off to prevent over-spray.

After cleaning, the contractor shall coat the hull from the waterline to the deck edge with a flake reinforced abrasion resistant epoxy barrier coat. The coating shall be similar to Ameron Amerlock 400GF. All surfaces shall be over coated with a barrier coat of 8 mils DFT minimum (not including existing coats).

Within the recoating time as defined by the paint manufacturer, the contractor shall apply a fade resistant urethane top coat, similar to Ameron Amercoat 450 HS.

All hull markings, draft numbers etc shall be overcoated with a white fade resistant urethane top coat

C113 ROLLER PATH GUARDS

The intent of this item is to provide personnel protection in the area of the crane rollers. The contractor shall install removable steel guards over the rollers in way of the upper landing on the fixed ladders, one port and one starboard. The area in question is approximately 8' across. The guards shall be fabricated from expanded metal to allow visual inspection of the rollers as well as any access to grease fittings. The contractor shall provide all labor, material, and services required to complete this scope of work. ~~Any~~All hardware shall be stainless steel. Guards shall be removable.

The guards and all removals or areas damaged or marred during the installation shall be restored per the original.

C114 EQUIPMENT GUARDS

The intent of this item is to provide personnel protection in the area of the center frame hoisting gear. ~~The~~ contractor shall install removable steel guards around the winch and wires in four locations, ~~two~~ port and two starboard. These locations are ~~one~~ the 30' level of the gate storage frame. The guards shall be designed so that they can be easily removed for inspection and replacement of the wire rope. The contractor shall provide all labor, material, and services required to complete this scope of work. ~~Any~~All hardware shall be stainless steel.

The guards and all removals or areas damaged or marred during the installation shall be restored per the original.

C590 TECHNICAL REPRESENTATIVES

The contractor shall provide the services of the following technical representatives during this repair availability to assist in the planning, execution, surveillance and inspection of the work described herein. All costs associated with retaining the services of these representatives shall be bourn by the contractor.

A. LEBUS INTERNATIONAL INC.

The contractor shall provide the services of a technical representative from LEBUS for all work associated with the procurement, fabrication, removal of existing crane drum lagging shells, and the installation of new shells, and testing.

The point of contact for Lebus International is:

Mr. Jim Mohler
LeBus International, Inc.
PO Box 2352
Longview, TX 75606
(903) 758-5521

B. KINETIC SYSTEMS & CONTROLS, INC.

The contractor shall provide the services of a technical representative from KINETIC for all work associated with the procurement, fabrication, removal of existing crane components, installation of new crane components, crane start-up, and testing.

The point of contact for Kinetic Systems & Controls, Inc is:

Mr. Hank Moorehouse
Kinetic Systems & Controls, Inc
93 Main Street
Ogdensburg, NJ 07439
(973) 209-1885

Estimate a total of thirty (30) days on-site for each representative. Deviations in the total required time on-site site will be coordinated and approved by the Contracting Officer.

C598 CRANE REPAIRS

INTENT: The contractor shall provide all labor, material, and services required to perform various repairs and the replacement in kind of machinery components on the crane, which is an Ederer Model-52. Currently, the crane is fully functional and operable. The work described in this item shall improve the crane's overall performance and extend the service life of the machinery.

METHODOLOGY: This limited repair availability shall have 2 distinct phases. Work shall be performed in accordance with the phase sequencing diagram in Contract Clause H02.

REMOVALS: Various removals and provisions for access shall be necessary to facilitate this work. The process of disassembly and removal of equipment shall be at the discretion of the contractor. For estimating purposes, the heaviest components associated with this work are the boom hoist and main hoist assemblies. Both assemblies weigh approximately 27 tons.

CONTRACTOR FURNISHED EQUIPMENT: The contractor shall assume the responsibility to provide all equipment, material, and services required to complete the work described in this specification.

Specific crane machinery components have been identified herein for replacement in kind. These components have been identified topically in this item for proposal preparation purposes. However, the contractor shall note that the actual performance requirements for the critical components have been identified in Contract Clause C599 EQUIPMENT SPECIFICATIONS.

MAIN HOIST:

This scope of work includes the replacement of the existing bull gear, pinion, and lagging on the main hoist drum. The contractor shall formulate and execute a plan to remove the existing main hoist drum from the vessel. The contractor shall make all removals necessary and provide access in the housetop to facilitate removal of the components. Removals shall include but are not limited to the main hoist wire rope, machinery housings, wire ways, light fixtures, house structure, etc. The Government intends to retain and reinstall the existing main hoist wire. Approximately, 6,000 feet of 1.5 diameter wire rope is installed. The contractor shall ensure the wire rope is properly spooled on temporary devices to prevent any damage. It should be noted that the existing house structure is inadequate for attaching padeyes for rigging purposes.

The main hoist drum shall be removed from the vessel and sent to a machine shop facility. The existing lagging shall be removed from the drum and new contractor furnished lagging installed. All work shall under the direct supervision of a representative from Lebus International as required by Clause C590 TECHNICAL REPRESENTATIVES.

The existing bull gear shall be removed from the drum and replaced with the new contractor furnished bull gear. All work associated with the new gears shall be under the direct supervision of a representative of Kinetic System and Controls as required by Contract Clause C590 TECHNICAL REPRESENTATIVES.

The drum shall be returned to the vessel and reinstall as per original. The new contractor furnished pinion gear shall be installed at this time. The new gearing shall be aligned, the fit on the shafting checked along with the gear backlash and wear pattern. All work shall be under the direct supervision of a representative of Kinetic System and Controls.

Return all removals as per original. All removals or areas damaged or marred during the installation shall be restored as original.

BOOM HOIST:

This scope of work includes the replacement of the existing bull gear, pinion, and lagging on the boom hoist drum. It should be noted that the boom hoist is a dual drum configuration. Both drums are affected by this change. The contractor shall be required to make all removals necessary. Removals shall include but are not limited to the boom hoist wire rope, machinery housings, wireways, light fixtures, house structure, etc. The Government intends to retain and reinstall the existing boom hoist wire. Approximately, 4000 feet of 1.385" diameter wire rope is installed. The contractor shall ensure the wire rope is properly spooled on temporary devices to prevent any damage. It should be noted that the existing house structure is inadequate for attaching padeyes for rigging purposes.

The boom hoist drum shall be removed from the vessel and sent to a machine shop facility. The existing lagging shall be removed from the drums and new contractor furnished lagging installed. All work shall under the direct supervision of a representative from Lebus International as required by Clause C590 TECHNICAL REPRESENTATIVES.

The existing bull gear shall be removed from the drum and replaced with the new contractor furnished bull gear. All work associated with the new gears shall be under the direct supervision of a representative of Kinetic System and Controls as required by Contract Clause C590 TECHNICAL REPRESENTATIVES.

LUBRICANTS: Provide all lubricants required for gears, and any other impacted machinery.

CRANE START UP: Subsequent to the work performed above, all removals or areas damaged or marred during the installation shall be restored per the original. Wire rope shall be installed as the original and in accordance with the reaving diagram for the vessel. The original poured wire rope socket for the main hoist shall be reused. Specific measures shall be taken by the contractor to ensure the initial wrap of boom hoist wire rope is install tightly to prevent crushing from subsequent wraps.

CHECKPOINT:

TESTING:

The contractor shall conduct an operation test of the crane to the satisfaction of the Contracting Officer's Representative.

The contractor's responsibility shall be limited to the machinery, components and areas of the crane affected by this work, including the impact these areas may have on the overall operability of the crane.

The operational test of the crane shall include the following tests:

- Raise and lower the boom from the seated position to the maximum boom angle. Perform two (2) iterations of this maneuver.
- At 55' radius, demonstrate the spooling capability of the main hoist drum by raising and lowering the main hoist block from the 2-block position to the deck. Perform two (2) iterations of this maneuver.
- Load test the crane at its fully revolving rating of 350 tons at 110' radius. The contractor shall utilize the GFE test tank barge and its associated rigging for test weights. Perform two (2) iterations of this maneuver.
- Load test the crane at its over-the-stern (non-rotating) rating of 550 tons at 55' radius. The contractor shall utilize the GFE test tank barge and its associated rigging for test weights. Perform two (2) iterations of this maneuver

C599 CONTRACTOR FURNISHED EQUIPMENT

INTENT: The intent of this item is to identify specific long lead critical crane components. For the purposes of proposal preparation and evaluation, the contractor shall identify all costs associated with the procurement of the specific items listed below for this specific line item in the Section B BID SCHEDULE. Costs shall include all planning, engineering, and labor associated with the procurement of these items.

The costs associated with the installation of the items as well as technical representative fees shall be included in the individual work items (C590 & C598). Additionally, any material, equipment, incidentals, and consumables not specifically mentioned in this item are the sole responsibility of the contractor. Such costs shall be included in the individual work items (C590 & C598) for the purposes of proposal preparation and evaluation.

A SPECIFICATIONS FOR GEAR SETS

GENERAL

- All gear material to be through-hardened using 4141 forged steel with a 269-321BHN hardness (normally .95% chromium and .20% molybdenum content).
- All pinion material to be through-hardened using 4340 forged steel with 341-388 BHN hardness. (Normally 1.80% nickel, .80% chromium, .25% molybdenum)
- All forged blanks are to be material certified prior to cutting the gear teeth. There is not to be rewelding on gear and pinion blanks where the teeth shall be. Welding is permissible only on non-effected areas in case of ~~to~~ blowholes but only with the engineer's approval before cutting gear teeth.
- The ID bore of all gears shall be ¼" diameter under sized on the ID and shall be machined when old gears are removed from their drums. This is to make sure that the drums are true and have not lost their shape. The keyway cut into the gear has to allow for this depth.
- A suggested source for these components is Kinetic Systems & Controls, Inc, who assisted the Government in determining the manufacturing details and requirements.

MAIN HOIST 1-Set

- 50.500 Center distance
- Gear -4140 forged steel spur gear, 82 teeth, 8" Face, 20PA, 1"DP, 61"ID, 82"PD, 84"OD, 1" x ½" Keyway
- Pinion-4340 forged steel spur pinion, 19 teeth, 8.5"Face, 20PA, 1"DP, 19"PD, 21"OD, SOS 32" LOA
- 400HP at 1150 RPM thru 2000 RPM
- Gearbox ratio 20.790:1
- Pinion rotates 55.315 RPM
- Gear Rotates 12.817 RPM with a torque of 1,966,445 in/lbs

BOOM HOIST 1-Set

- 40.400" Center distance
- Gear- 4140 Forge steel spur gear, 84 teeth, 1.25DP, 20PA, 14"Face, 50ID, 67.20PD, 68.80OD, 1" x ½" keyway
- Pinion- 4340 Forge steel spur pinion, 17 teeth, 1.25DP, 20PA, 14.5" Face, 13.60PD, 15.20OD, SOS 43" LOA
- 250 HP at 1150RPM thru 2000 RPM
- Gearbox ratio 31.496:1
- Pinion rotates 36.513 RPM
- Gear rotates 7.41RPM, at 2,125,506 in./lbs.

TWO WIRE (AUX DRIVE) 1-Set

- 24.666 Center Distance
- Gear-4140 Forge steel spur gear, 52 teeth, 1.5DP, 20PA, 5.00" Face, 20"ID, 34.66PD, 36OD, 1" x ½" Keyway.
- Pinion-4340 Forged steel spur pinion, 22 teeth, 1.5PD, 20PA, 5.500" Face, 14.66PD, 16.00OD, SOS 43" LOA.
- 300HP at 1150 RPM
- Gearbox ratio 16.970:1
- Pinion rotates 67.766 RPM
- Gear rotates 28.57RPM at 659,225 in/lbs

B SPECIFICATIONS FOR DRUM LAGGING

Drum lagging shall be obtained from a domestic manufacturer such as LeBus International. The point of contact at LeBus is Mr. Jim Mohler (903) 758-5521.

MAIN HOIST DRUM

- Drum size: 61" diameter x 83.160" wide
- Rope size: 1.250" diameter (nomial)
- Groove Direction: RH
- Pitch diameter: 63-385"
- Grooving Type: Counterbalance or "LeBus" type for multi-layer
- Pitch: 1.299" (4% oversize)
- Spooling Range: 1.299" (max) to 1.260" (min)
- Material: A-36
- Weld-on or Bolt-on type: Weld-on

BOOM HOIST DRUMS (Quantity 2)

- Drum size: 23.500" diameter x 23.250" wide
- Rope size: 1.385" diameter (nominal)
- Groove Direction: 1 RH & 1 LH
- Pitch diameter: 27.500"
- Grooving Type: Counterbalance or "LeBus" type for multi-layer
- Spacer Plate: 0.385" thick x 24.500" I.D. x 49.500 O.D. (A-36 Material)
- Pitch: 1.430" (4% oversize)
- Spooling Range: 1.430" (max) to 1.387" (min)
- Material: A-36
- Weld-on or Bolt-on type: Weld-on

C901 MISCELLANEOUS REPAIRS (IF DIRECTED)

A. This item is intended to provide the services of journeymen level mechanics, shipfitters, and welders to perform work to the vessel's equipment for the entire duration of the repair period. Work items shall be described in writing on a Government 2-Way Memo Form and shall be based on a joint survey with the contractor. Only the COR is authorized to issue 2-way memos. Work items shall be priced and agreed upon prior to the initiation of any work. See Section H - Special Contract Requirements, Paragraph H-14, entitled "Change Proposals", for requirements of 2-Way Memo submission. The contractor, in connection with any proposal he makes, or the Government requests for a change shall furnish a total, lump sum price together with a price breakdown itemized as required. Unless otherwise directed, the breakdown shall set forth separately the following:

(a) MATERIALS: Quantity computations and materials pricing (support by invoices or price quotes or define as estimated).

(b) LABOR: Provide manhours by trade as agreed upon by the Contracting Officer's Representative.

(c) EQUIPMENT: Define equipment to be employed and hours used, both effective and noneffective. If equipment is part of an overall markup or labor costs, define as such. Provide rates used for equipment listed separately.

(d) SUBCONTRACT COSTS: Contractor shall submit vouchers of the subcontractor's costs unless waived by the Contracting Officer's Representative.

(e) MISCELLANEOUS: Any portions of the proposal for estimated costs for changes not covered in (a) to (e) above, shall be defined and set forth separately.

ESTIMATE ON 1,000 LABOR HOURS. PRICE PER HOUR.

For completion of 1,000 hours based on a STRAIGHT-TIME rate, shall require adequate staffing and/or double shifts during the entire period. The HOURLY RATE proposed for this item shall include overhead, general and administration costs, and any additional costs or premium time incurred for second and third shifts, weekends, holidays and all travel costs, including insurance, travel to and from shop and work site in excess of one mile and night-differential. A single hourly rate shall be paid for each 24 hour day.

The Contractor shall have available at the yard where the work is performed, an ESTIMATOR (or other authorized person) to survey any work that may be found necessary. The estimator shall be made available the same day that the additional work is found (including weekends) and shall submit an estimate of the cost for the within 24 hours.